# State of Birth

# GENERAL

This report, based on the 1960 Census of Population, presents 25-percent sample data on State of birth of the native population living in the United States at the time of the census. Statistics include cross-classification by age, color, sex, and State of residence in 1960, and are presented for the United States, by metropolitan-nonmetropolitan residence, and for regions, divisions, States, and standard metropolitan statistical areas of 250,000 inhabitants or more.

#### RELATED MATERIALS

Additional information on the mobility of the population is available in other 1960 Census reports. Statistics for the individual States, the urban and rural parts of each State, the metropolitan and nonmetropolitan parts of each State, and each standard metropolitan statistical area (SMSA), urbanized area, urban place of 10,000 inhabitants or more, and county appear in chapter C of the individual State parts of 1960 Census of Population, Volume I, Characteristics Statistics in greater detail for of the Population. the State and for cities of 250,000 inhabitants or more appear in chapter D of the report. Summary data for the United States, regions, divisions, and cities and standard metropolitan statistical areas of 250,000 or more are shown in the United States Summary chapters of the report. Other Volume II reports on this subject include Mobility for States and State Economic Areas -- PC(2) -2B, which presents statistics on changes of residence between 1955 and 1960; Mobility for Metropolitan Areas--PC(2)-2C, which contains statistics on the movement of the population during the same period to and from SMSA's of 250,000 inhabitants or more and among their component parts; and Lifetime and Recent Migration -- PC(2) -2D, in which the 1960 population of States is cross-classified by division of residence in 1955, which, in turn, is cross-classified by division of birth. These data are presented by age, color, and

sex, and in an abridged form by years of school completed. Several other proposed Volume II reports which are devoted principally to subjects other than mobility call for one or more tables presenting crossclassification of the major subject by region of birth and region of residence of the population.

Data on State of birth of the native population have been collected and published in every decennial census beginning with that of 1850, but there were separate reports on this subject only in 1950 and 1940. The 1950 report was the first to show a cross-classification of State of birth by age.

### AVAILABILITY OF UNPUBLISHED DATA

Most of the 1960 data tabulated on the State of birth of the native population are presented in this report or other published reports. The statistics on the population by age of the type appearing in tables 30 to 34 have also been tabulated to provide a crossclassification of each State of 1960 residence with each State of birth. Because of space limitations, the statistics are shown for each State of birth by geographic division of 1960 residence. In addition, age in 5-year intervals was tabulated for that part of the resident population of each State born outside the State, by each State of birth. Similarly, the age data in 5-year intervals as shown for the standard metropolitan statistical areas in table 36 were also tabulated for central cities, the outlying ring by urban-rural residence, and the remainder of the State by urban-rural residence. This information is available on magnetic computer tapes. Information on the detailed contents of these tapes and their costs can be obtained by an inquiry addressed to the Chief, Population Division, Bureau of the Census, Washington 25, Inquiries concerning unpublished data should be transmitted to the Bureau as soon as possible, however, because tape files are not maintained indefinitely.

# **DEFINITIONS AND EXPLANATIONS**

Some of the definitions used in 1960 differ from those used in 1950. These changes were made after consultation with users of census data in order to improve the statistics, even though it was recognized that comparability would be affected. The definitions and explanations should be interpreted in the context of the 1960 Censuses, in which data were collected by a combination of self-enumeration, direct interview, and observation by the enumerator.

The definitions below are consistent with the instructions given to the enumerator. As in all surveys, there were some failures to execute the instructions exactly. Through the forms distributed to households, the respondents were given explanations of some of the questions more uniformly than would have been given in direct interviews. Nevertheless, it was not feasible to give the full instructions to the respondents, and some erroneous replies have undoubtedly gone undetected.

More complete discussions of the definitions of population items are given in 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary, and in each of the State parts.

# STATE OF BIRTH

Information on State of birth was derived from answers to the question, "Where was this person born?" For persons born in the United States, the State of birth was requested; and for persons born outside the United States. the country or outlying area of the United States. Presumably, the inquiry on State of birth relates to present State boundaries. No definite instructions to this effect, however, were given the enumerators. This would have more effect on older persons and on the figures from older censuses. In 1950, for the first time, the enumerators were specifically instructed to record the State of the mother's usual residence in the case of an infant born in a hospital rather than the State in which the hospital was located. This instruction was repeated in 1960. It is likely that it was often ignored. Most of the differences in the usual place of residence of the mothers and the location of the hospitals are intrastate, and, therefore, do not affect the statistics.

In the Censuses of 1850 and 1860, State of birth was presented for whites and for free Negroes only. In the reports for some of the more recent censuses, State of birth has been shown for the native population of the urban, rural-nonfarm, and rural-farm parts of States, and of individual cities above a specified minimum size.

Uses and limitations of the data.—The statistics on State of birth are of value mainly for the information they provide on the historic movements of the native population from one State to another within the United States from the time of birth to the date of the census. Extreme care should be exercised in the use of the statistics as representing or measuring migration, however, since in this connection they indicate only the net result of migration during the differing periods of the life of the persons enumerated.

The census figures on State of birth reflect the migration of only those persons who have moved from one State to another and are, on the date of the census, living in States other than those in which they were born. The statistics, therefore, afford no indication of the amount of migration within a given State from rural to urban communities or from one locality to another; nor do they take any account of intermediate moves between the time of a person's birth and the time of the census.

The statistics thus do not indicate the total number of persons who have moved from the State in which they were born to other States, or to any specific State, during any given period of time. Some of those who had gone from one State to another have since died, others have returned to the State in which they were born, and others have gone to still other States, or to places outside the United States.

Net gain or loss through interregional, interdivisional, or interstate movement .-- The net gain or loss through interregional movement (tables 5 and 16) interdivisional movement (tables 6, 7, 8, and 17), or interstate movement (tables 11 to 14) represents the difference in the census data between the total number of surviving native persons who had moved out of the specified area since they were born and the total number of surviving native persons who had moved into the specified area since they were born. Some of these persons are the survivors of groups who departed from or arrived in the area half a century or more before the census date. The figures, therefore, do not represent migration in the sense of the number of persons coming or going during the previous census decade or during any other specific period of time. The "change in net gain or loss as compared with the previous census," as shown in the final column of table 7, represents the algebraic difference between the net gains or losses at the beginning and end of the decade. Even this figure, however, does not represent exactly the difference between the number of native migrants out of the region and the number of native migrants into the region, since it is affected also by differences in mortality and by the movement of the native population between the area in question and foreign countries.

Although it is not possible to estimate migration during a given decade from statistics on State of birth, it is possible to make such estimates from other census statistics. Specifically, net migration for a given State, or other area, for a given intercensal decade can be estimated relative to all other areas combined. Such estimates may also be made by age, sex, race, and nativity. Very briefly, the procedure consists of starting with the population in a given State at a particular census, allowing for mortality during the decade, and subtracting the numbers of estimated survivors from the corresponding population enumerated in the State at the next census. Census Bureau has published estimates by this socalled "residual method" by States for the period 1950 to 1960 in Current Population Reports, Series P-25. (See for example Nos. 227 and 247.) Estimates for counties, State economic areas, etc., are published in Current Population Reports, Series P-23, No. 7.

The present report is the second to present Stateof-birth data cross-classified by fairly detailed age These data give somewhat more information on the time of migration than the data shown for earlier censuses. With the use of appropriate mortality rates, one can compute, for example, from the number of persons 20 to 29 years old living in California in 1950 but born in another State, the number expected in the same category 30 to 39 years old in 1960 had there been no further in-migration during the decade. A comparison of the expected and observed numbers for 1960 will indicate the approximate inmigration to California in this age cohort during the decade, if in-migrants during the decade are defined as those who came into the State during the decade and were still living there at the end of the decade. The chief source of error in this approximation is the

departures of former in-migrants. Similarly, fairly good estimates can be made of the total out-migrants from a given State to all other States and of the net migration. Using the figures on the number born and still living in the same State at successive censuses, one can also identify the age groups in which there has been further net out-migration during the decade and those in which there has been net return migration.

State of birth statistics by age at successive censuses yield much less accurate estimates, however, of particular streams of migration during the decade. Consider, for example, the 1950-1960 migrants from New England to California. The additional complication here is that one does not know whether the decennial increment in the New England-born represents persons who left New England during the decade or whether it represents persons who left New England prior to 1950 and were living in a third area in 1950--Iowa, for example. The only exception is the case of the children under 10 years old at the time of the latest census, who obviously left their birthplace during the most recent decade.

Contiguous and noncontiguous States.--For persons who are living in a different State from the State of their birth, the data indicate whether the interstate move occurred between contiguous or noncontiguous States. States have been classified as contiguous if their boundaries touch at any point.

# UNITED STATES AND CONTERMINOUS UNITED STATES

In 1960 reports, the term "United States" when used without qualification refers to the 50 States and the District of Columbia but excludes outlying areas. In some tables, in order to preserve historical comparability, totals are shown for the 48 States and the District of Columbia. This area is designated as "conterminous United States." For earlier censuses, this term refers to the expanding area of the United States (regardless of status as a State or territory) within the area of the 48 States and the District of Columbia.

#### STANDARD METROPOLITAN STATISTICAL AREAS

Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consist of towns and cities, rather than counties.

The population inside SMSA's is further classified as "in central cities" and "outside central cities." With a few exceptions, central cities are determined according to the following criteria:

- 1. The largest city in an SMSA is always a central city.
- 2. One or two additional cities may be secondary central cities on the basis and in the order of the following criteria:
  - a. The additional city or cities have at least 250,000 inhabitants.
  - b. The additional city or cities have a population of one-third or more of that of the largest city and a minimum population of 25,000.

#### AGE

The age classification is based on the age of the person in completed years as of April 1, 1960, as determined from the reply to a question on month and year of birth.

Median.--The median age is the age which divides the distribution into two equal parts, one-half the cases falling below this age and one-half the cases exceeding this age.

<sup>1</sup> The following is a list of the contiguous States for each

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State:
Alabama..... Fla., Ga., Miss., Tenn.
Alaska.....
                   None
Arizona.....
                   Calif., Colo., Nev., N. Mex., Utah
                   La., Miss., Mo., Okla., Tenn., Texas
Ariz., Nev., Oreg.
Arkansas.....
California.....
                   Ariz., Kans., Nebr., N. Mex., Okla., Utah, Wyo. Mass., N.Y., R.I.
Colorado.....
Connecticut....
Delaware.....
                   Md., N.J., Pa.
Dist. of Col....
                   Md., Va.
Florida..... Ala., Ga.
Georgia.....
                   Ala., Fla., N.C., S.C., Tenn.
Hawaii.....
                   None
Idaho....Illinois....
                   Mont., Nev., Oreg., Utah, Wash., Wyo.
Ind., Iowa, Ky., Mo., Wis.
Ill., Ky., Mich., Chio
Indiana.....
Iowa.....
                   Ill., Minn., Mo., Nebr., S. Dak., Wis.
                   Colo., Mo., Nebr., Okla.
Ill., Ind., Mo., Ohio, Tenn., Va., W.Va.
Kansas.....
Kentucky.....
Louisiana.....
                   Ark., Miss., Texas
Maine....
Maryland.....
                   Del., D.C., Pa., Va., W.Va.
Massachusetts...
                   Conn., N.H., N.Y., R.I., Vt. Ind., Ohio, Wis.
Michigan.....
Minnesota.....
                   Iowa, N. Dak., S. Dak., Wis.
Mississippi....
                   Ala., Ark., La., Tenn.
                   Ark., Ill., Iowa, Kans., Ky., Nebr., Okla., Tenn.
Missouri.....
Montana.....
                   Idaho, N. Dak., S. Dak., Wyo.
Nebraska.....
                   Colo, Iowa, Kans., Mo., S. Dak., Wyo. Ariz., Calif., Idaho, Oreg., Utah Maine, Mass., Vt.
Nevada......
New Hampshire...
New Jersey.....
                   Del., N.Y., Pa.
                   Ariz., Colo., Okla., Texas, Utah
New Mexico.....
New York.....
                   Conn., Mass., N.J., Pa., Vt.
North Carolina..
                   Ga., S.C., Tenn., Va.
North Dakota....
                   Minn., Mont., S. Dak.
Ohio....
                   Ind., Ky., Mich., Pa., W.Va.
Oklahoma.....
                   Ark., Colo., Kans., Mo., N. Mex., Texas
Oregon....
                   Calif., Idaho, Nev., Wash.
Pennsylvania....
                   Del., Md., N.J., N.Y., Ohio, W.Va.
Rhode Island....
                   Conn., Mass.
South Carolina.
                   Ga., N.C.
                   Towa, Minn., Mont., Nebr., N. Dak., Wyo. Ala., Ark., Ga., Ky., Miss., Mo., N.C., Va.
South Dakota....
Tennessee.....
Texas..... Ark., La., N. Mex., Okla.
                   Ariz., Colo., Idaho, Nev., N. Mex., Wyo. Mass., N.H., N.Y.
Utah....
Vermont.....
Virginia.....
                   D.C., Ky., Md., N.C., Tenn., W.Va.
Washington....
                   Idaho, Oreg.
West Virginia...
                   Ky., Md., Ohio, Pa., Va.
Wisconsin.....
                   Ill., Iowa, Mich., Minn.
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Wyoming..... Colo., Idaho, Mont., Nebr., S. Dak., Utah

#### RACE AND COLOR

The three major race categories distinguished in this report are white, Negro, and other races. Among persons of "other races" are American Indians, Japanese, Chinese, Filipinos, Koreans, Hawaiians, Asian Indians, Eskimos, Aleuts, and Malayans. Negroes and persons of "other races" taken together constitute "nonwhite" persons. Persons of Mexican birth or descent who are not definitely of Indian or other nonwhite race are classified as white. In addition to persons of Negro and of mixed Negro and white descent, the category "Negro" includes persons of mixed Indian and Negro descent unless the Indian ancestry very definitely predominates or unless the person is regarded as an Indian in the community.

#### NATIVITY

Native.--This category comprises persons born in the United States, the Commonwealth of Puerto Rico, or a possession of the United States; persons born in a foreign country or at sea who have at least one native American parent; and persons whose place of birth was not reported and whose census report contained no contradictory information, such as an entry of a language spoken prior to coming to the United States.

The category "born in outlying areas" includes persons born in the Commonwealth of Puerto Rico and other areas of United States sovereignty or jurisdiction. The areas included vary from census to census. Persons born in Alaska and Hawaii, for example, were

included in this category prior to 1960 and are so shown where the 1960 data relate to conterminous United States. Persons born in the Philippine Islands were included in this category from the Census of 1900 through that of 1940.

The definition of the category "born abroad or at sea of American parents" in the 1960 Census differs from that used in previous years. Prior to 1960, persons born outside the United States, the Commonwealth of Puerto Rico, and other areas of sovereignty and jurisdiction were classified as native if their parents were citizens of the United States. In 1960, there was no general inquiry on citizenship, and thus it was not possible to identify as native the children born abroad to naturalized American citizens.

Nonetheless, there was a substantial increase in the number of persons counted in this category, from about 96,000 in 1950 to about 400,000 in 1960. A part of this increase reflects, of course, the increase in the number of members of the Armed Forces and civilian Federal employees and their respective families living abroad. A total of 332,000 births occurring abroad to these American citizens were voluntarily reported by their parents in the decade 1950 to 1960. This number is reflected in about 140,000 "native" children under 10 years old who were reported in the 1960 Census as having been born abroad. Since many of those born abroad are still living there, the number counted in the 1960 Census would be expected to be lower than 332,000.

# COLLECTION AND PROCESSING OF DATA

# COLLECTION OF DATA

Several enumeration forms were used to collect the information for the 1960 Census of Population. A few days before the census date, the Post Office Department delivered an Advance Census Report (ACR) to households on postal delivery routes. This form contained questions which were to be answered for every person and every housing unit. Household members were requested to fill the ACR and have it ready for the The census enumerator recorded this inenumerator. formation on a form specially designed for electronic data processing by FOSDIC (Film Optical Sensing Device for Input to Computer). The information was either transcribed from the ACR to the complete-count FOSDIC schedule or entered on this schedule during direct interview.

In the densely populated areas, the enumerator left a Household Questionnaire to be completed by each household (or person) in the sample and mailed to the local census office. The population and housing information was transcribed from the Household Questionnaire to a sample FOSDIC schedule. When the Household Questionnaire was not returned or was returned without having been completed, the enumerator collected the missing information by personal visit or by telephone and entered it directly on the sample FOSDIC schedule. In the remaining areas, when the enumerator

picked up the ACR, he obtained all the information by direct interview and recorded it directly on the sample FOSDIC schedule.

Soon after the enumerator started work, his schedules were examined in a formal field review. This operation was designed to assure at an early stage of the work that the enumerator was performing his duties properly and had corrected any errors he had made.

More detailed descriptions of the 1960 Census procedures in the collection and processing of the data are given in reports entitled United States Censuses of Population and Housing, 1960: Principal Data Collection Forms and Procedures, 1961; and Processing the Data, 1962, U.S. Government Printing Office, Washington 25, D.C.

# ELECTRONIC PROCESSING

Several steps were required to process the data. First, the enumerator recorded the information by marking appropriate circles on the FOSDIC schedules. These schedules were later microfilmed and the information was read by FOSDIC, which converted the markings to signals on magnetic tape. The tape, in turn, was processed in an electronic computer, which was used extensively to edit and tabulate the data and to produce the publication tables.

### EDITING

For a majority of items, nonresponses and inconsistencies were eliminated by using the computer to assign entries and correct inconsistencies. In general, few assignments or corrections were required, although the amount varied by subject and by enumerator.

The assignment of an acceptable entry by machine was based on related information reported for the person or on information reported for a similar person in the immediate neighborhood. For example, in the assignment of age in the complete-count tabulations, the computer stored reported ages of persons by sex. color or race, household relationship, and marital status; each stored age was retained in the computer only until a succeeding person having the same characteristics and having age reported was processed through the computer; this stored age was assigned to the next person whose age was unknown and who otherwise had the same characteristics. This procedure insured that the distribution of ages assigned by the computer for persons of a given set of characteristics would correspond closely to the reported age distribution of such persons as obtained in the current census.

The extent of the allocations for nonresponse or for inconsistency is shown for States, places of 10,000 inhabitants or more, and other areas in appendix tables in chapters B, C, and D of 1960 Census of Population. Volume I, Characteristics of the Population.

Specific tolerances were established for the number of computer allocations acceptable for a given area. If the number was beyond tolerance, the data were rejected and the original schedules were reexamined to determine the source of the error. Correction and reprocessing were undertaken as necessary and feasible.

# ACCURACY OF THE DATA

Human and mechanical errors occur in any mass statistical operation such as a decennial census. Such

errors include failure to obtain required information from respondents, obtaining inconsistent information, recording information in the wrong place or incorrectly, or otherwise producing inconsistencies between entries on interrelated items on the field documents. Sampling biases occur because some of the enumerators fail to follow the sampling instructions. Clerical coding and editing errors occur, as well as errors in the electronic processing operation.

Careful efforts are made in every census to keep the errors in each step at an acceptably low level. Review of the enumerator's work, verification of manual coding and editing, checking of tabulated figures, and ratio estimation of sample data to control totals from the complete count reduce the effects of the errors in the census data.

Very minor differences between tables in this report or between corresponding data in this report and chapters C and D of Volume I, Characteristics of the Population, result from imperfections in the electronic equipment. No attempt has been made to reconcile these minor discrepancies.

Some immovations in the 1960 Censuses reduced errors in processing and others produced a more consistant quality of editing. The elimination of the card-punching operation removed one important source of error. The extensive use of electronic equipment insured a more uniform and more flexible edit than could have been accomplished manually or by less intricate mechanical equipment. It is believed that the use of electronic equipment in the 1960 Censuses has improved the quality of the editing compared with that of earlier censuses but, at the same time, it has introduced an element of difference in the statistics.

A group of reports designated "Evaluation and Research Series" will deal with the methods, results, and interpretation of a group of evaluation and research studies of the 1960 Censuses of Population and Housing. A report entitled The Post-Enumeration Survey: 1950, Technical Paper No. 4, presents evaluative material on the 1950 Census.

# SAMPLE DESIGN AND SAMPLING VARIABILITY

## SAMPLE DESIGN

For persons in housing units at the time of the 1960 Census, the sampling unit was the housing unit and all its occupants; for persons in group quarters, it was the person. On the first visit to an address, the enumerator assigned a sample key letter (A, B, C, or D) to each housing unit sequentially in the order in which he first visited the units, whether or not he completed an interview. Each enumerator was given a random key letter to start his assignment, and the order of canvassing was indicated in advance, although these instructions allowed some latitude in the order of visiting addresses. Each housing unit which was assigned the key letter "A" was designated as a sample unit and all persons enumerated in the unit were included in the sample. In every group

quarters, the sample consisted of every fourth person in the order listed.

Although the sampling procedure did not automatically insure an exact 25-percent sample of persons or housing units in each locality, the sample design was unbiased if carried through according to instructions; and, generally, for large areas the deviation from 25 percent was found to be quite small. Biases may have arisen however, when the enumerator failed to follow his listing and sampling instructions exactly.

### RATIO ESTIMATION

The statistics based on the sample of the 1960 Census returns are estimates that have been developed through the use of a ratio estimation procedure. This procedure was carried out for each of 44 groups of

persons in each of the smallest areas for which sample data are published. 2 (For a more complete discussion of the ratio estimation procedure, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.)

These ratio estimates reduce the component of sampling error arising from the variation in the size of household and achieve some of the gains of stratification in the selection of the sample, with the strata being the groups for which separate ratio estimates are computed. The net effect is a reduction in the sampling error and bias of most statistics below what would be obtained by weighting the results of the 25-percent sample by a uniform factor of four. reduction in sampling error is trivial for some items and substantial for others. A by-product of this estimation procedure, in general, is that estimates for this sample are consistent with the complete count with respect to the total population and for the subdivisions used as groups in the estimation procedure.

# SAMPLING VARIABILITY

The figures from the 25-percent sample tabulations are subject to sampling variability, which can be estimated roughly from the standard errors shown in tables A and B. Somewhat more precise estimates of sampling error may be obtained by using the factors shown in table C in conjunction with table B for percentages and table A for absolute numbers. These tables3 do not reflect the effect of response variance. processing variance, or bias arising in the collection. processing, and estimation steps. Estimates of the magnitude of some of these factors in the total error are being evaluated and will be published at a later date. The chances are about 2 out of 3 that the difference due to sampling variability between an estimate and the figure that would have been obtained from a complete count of the population is less than the standard error. The chances are about 19 out of 20 that the difference is less than twice the standard error and about 99 out of 100 that it is less than  $2\frac{1}{2}$ times the standard error. The amount by which the estimated standard error must be multiplied to obtain other odds deemed more appropriate can be found in most statistical text books.

$$x^{t} = \sum_{i=1}^{44} \frac{x_{i}}{\overline{y}_{1}} Y_{i}$$

where x' is the estimate of the characteristic for the area obtained through the use of the ratio estimation procedure,

Y<sub>1</sub> is the count of all sample persons for the area in the same one of the 44 groups, and
Y<sub>1</sub> is the count of persons in the complete count for the area in the same one of the 44 groups.

These estimates of sampling variability are based on partial countries.

Table A .-- ROUGH APPROXIMATION TO STANDARD ERROR OF ESTIMATED NUMBER

(Range of 2 chances out of 3)

Estimated number	Standard error	Estimated number	Standard error		
50	20 30 40 50	5,000	160 190 250		

Table A shows rough approximations to standard errors of estimated numbers up to 50,000.4 tive sampling errors of larger estimated numbers are somewhat smaller than for 50,000. For estimated numbers above 50,000, however, the nonsampling errors, e.g., response errors and processing errors, may have an increasingly important effect on the total error. Table B shows rough standard errors of data in the form of percentages. Linear interpolation in tables A and B will provide approximate results that are satisfactory for most purposes.

Table B .-- ROUGH APPROXIMATION TO STANDARD ERROR OF ESTIMATED PERCENTAGE

(Range of 2 changes out of 3)

Estimated percentage	Base of percentage						
	500	1,000	2,500	10,000	25,000	100,000	
2 or 98 5 or 95 10 or 90 25 or 75	1.3 2.0 2.8 3.8 4.4	0.9 1.4 2.0 2.7 3.1	0.5 0.9 1.2 1.5	0.3 0.4 0.6 0.7 0.8	0.1 0.2 0.3 0.4 0.5	0.1 0.1 0.2 0.2 0.3	

For a discussion of the sampling variability of medians and means and of the method for obtaining standard errors of differences between two estimates, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.

Table C provides a factor by which the standard errors shown in table A or B should be multiplied to adjust for the combined effect of the sample design and the estimation procedure. To estimate a somewhat more precise standard error for a given characteristic, locate in table C the factor applying to the characteristic. Multiply the standard error given for the size of the estimate as shown in table A by this factor from table C. The result of this multiplication is the approximate standard error. Similarly, to obtain a somewhat more precise estimate of the standard error of a percentage, multiply the standard error as shown in table B by the factor from table C.

<sup>&</sup>lt;sup>2</sup> Estimates of characteristics from the sample for a given area are produced using the formula:

x, is the count of sample persons with the characteristic for the area in one (i) of the 44 groups,

y, is the count of all sample persons for the area in the

information on variances calculated from a sample of the 1960 Census results. Further estimates are being calculated and will Further estimates are being calculated and will be made available at a later date.

<sup>4</sup> For the special case of measuring standard errors of the figures on net gain or loss through interarea movement that appear in this report, see the discussion for table D.

Table C .-- FACTOR TO BE APPLIED TO STANDARD ERRORS

Characteristic	Factor	
Nativity, place of birth	0.8 1.0	

Illustration: Table 4 shows that there are 36,300 nonwhites born in the North Central Region and living in the Northeast Region. Table A shows that the standard error for an estimate of 36,300 is about 295. Table C shows that for characteristics on color by place of birth and residence the standard error from table A should be multiplied by a factor of 1.0. The factor of 1.0 times 295, or 295, means that the chances are approximately 2 out of 3 that the results of a

complete census would not differ by more than 295 from this estimated 36,300. It also follows that there is only about 1 chance in 100 that a complete census result would differ by as much as 738, that is, by about  $2\frac{1}{2}$  times the number estimated from tables A and C.

Table D gives a rough approximation to the standard error of the net migration for an area. The net migration is estimated by subtracting the number of persons born in the area but residing elsewhere on April 1, 1960, from the number of persons residing in the area on April 1, 1960, but born elsewhere. To determine the approximate standard error of this difference, locate the column representing the larger of the two numbers in table D and the row representing the smaller of the two numbers. The figure at the intersection of the row and column represents a rough approximation to the standard error of the difference of the two migration estimates.

Table D.--ROUGH APPROXIMATIONS TO STANDARD ERRORS OF ESTIMATED NET MIGRATION (Range of 2 chances out of 3)

Smaller of two estimates of migration	Larger of two estimates of migration					
	100,000	250,000	500,000	1,000,000.	2,500,000	5,000,000
50,000	•••	850 900	1,150 1,200 1,350	1,550 1,600 1,700 1,850	2,300 2,350 2,400 2,550 2,750	2,800 2,850 2,900 3,000 3,200
1,000,000 2, <i>5</i> 00,000	•••	•••	•••	• • •	2,750	3,600

REGIONS AND GEOGRAPHIC DIVISIONS OF THE UNITED STATES